

Advertising and Educational Financial Campaign PROGRESS BULLETIN

National Confectioners' Association

C. S. CLARK Financial Campaign Director

1627 Locust Street

St. Louis, Mo., July 12, 1926

Number Four

THE total amount of the pledges to the Advertising and Educational Fund to date is \$611,243. This is a gain of 39 pledges, totaling \$44,110, since our last report. In view of the fact that the Fourth of July holidays intervened, this indicates a healthy growth and satisfactory progress.

The first two cities to have gone over their quota are Los Angeles and Denver. Regardless of this fact, efforts to secure additional pledges are being made and no doubt the present totals will be greatly increased. The Pacific Coast cities had a slight advantage over the Eastern and Mid-west cities, due to having been the first organized.

Cost of Securing Pledges

The cost of securing the first \$500,000 of pledges toward our Cooperative Advertising and Educational Campaign was a trifle over \$1,800. This means that members of the industry are giving their time willingly and without charge or expense. Many other industries have paid 15 per cent to organized promotion agencies to secure their pledges. The Fisher-Brown Advertising Agency have contributed, without cost to us, the services of Mr. Wilson and their other experts. We are sure that this information would be pleasing to you, and it is also given to correct rumors that have been afloat to the effect that it was costing us 15 per cent to secure our pledges.

Pennsylvania Confectioners' Endorsement

At the recent convention of the Pennsylvania Confectioners' Association, held at Bedford Springs, the subject of our Advertising and Educational Campaign was most ably presented by A. E. Sanders, President of the Association. Pennsylvania confectioners were urged to support the movement and to send their pledges to headquarters as promptly as possible. A letter has been received by Mr. V. L. Price from Mr. A. E. Sanders, President, advising that the following resolution was offered and unanimously passed:

"Resolved, That we as members of the Pennsylvania Confectioners' Association heartily endorse the movement of the National Confectioners' Association towards a National Advertising and Educational Campaign to stimulate

the sale of candy and educate the public to the industry, and we further urge our members to support the campaign morally and with their financial contributions to the advertising fund as liberally as possible in order to meet Pennsylvania's apportionment."

St. Louis Jobbing Confectioners' Association Subscribe 100 Per Cent.

Every one of the 67 members of the St. Louis Jobbing Confectioners' Association has pledged his financial support to the Cooperative Advertising and Educational Campaign for a period of three years. This pledge was made in the name of the Association and will be collected by the Secretary of the Association. This is an example for other jobbing associations throughout the country. It means that a jobber is contributing his part to the benefits that will come to him as the result of the work planned. We sincerely hope that other jobbing associations may take note of the cooperation and example of the St. Louis Association and subscribe as an Association in similar manner.

The Texas Candy Club has eleven members, all manufacturing confectioners. Eight members have sent pledges to Mr. Price. Secretary Olin Davis hopes to make it 100 per cent before the sun sets at the end of another week. What Confectioners' Club is going to match this achievement?

Report of Pledges for Period Ending July 12th

The following is the report of pledges received to the Advertising and Educational Financial Campaign Fund up to the present time:

| | |
|--|-----------|
| Amount pledged to June 26th, inclusive | \$567,133 |
| Amount of pledges received June 26th to July 10th..... | 44,110 |

Total amount received to date.....\$611,243

All pledges should be sent to V. L. Price, President National Confectioners' Association, 208 North Broadway, St. Louis, Mo., as soon as received, for publication in the Progress Bulletin. A record of the pledges will be kept by him for the Executive Committee and for reports to be sent at intervals to members on the progress of the Advertising and Educational Fund.

EDITORIAL



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**A Specialized Technical and Commercial Magazine for
Confectionery Superintendents, Purchasing
Agents and Executives**

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EARL R. ALLURED,
Editor - Publisher.

The Consumer's Friend—The Chemist

When Chemistry began to send its agents rapping at Industrial doors these men were thought to be purveyors of drugs and foul-smelling things they kept in test tubes. Now they are recognized as men who can stand between any manufacturer and the makers of fraudulent impositions upon the trade.

The chemist is simply a man who can tell a manufacturer exactly what he is buying. He never notices labels. He finds out for himself what is behind the label.

When a manufacturer has a good laboratory to show to visitors it stands to the public as an insurance against fraud upon the public that the manufacturer might not otherwise be able to protect.

The days of Health Department exhibits in which flags were made from dies extracted from food products show what morale-destroying results followed the pre-laboratory age.

"A host of instances," states *Baking Technology* regarding an attack on the chemist made by a retail baker, "might be cited to show that the better bread of today is due to the application of scientific research. The modern laboratory is in no way associated with drug stores. It appeals to the public because modern education enables people to understand the legitimate and useful application of chemical science to everyday life."

How the Baking Industry Dealt with Fly-by-Night Jobbers

When the men of any industry get together they soon find that their major problems are just alike. More than that, the speeches at one convention would fit, almost with the change of the names of products alone, with the needs of almost any other industrial convention.

All in common fight the problem of the fly-by-night jobber. He does nothing to build up the industry and while he undercuts the regular jobbing trade for a time, in the end he disorganizes both manufacturer and retailer and brings woe to all.

One speaker at the recent N. C. A. Convention made an appeal that remains strong in our minds. "Why," he demanded of his fellow confectioners, "can anybody who owns nothing but a second-hand truck and a garage have jobbing orders filled *on credit* in territory well covered by responsible men? Why do the tobacco manufacturers do ten times the business of the manufacturing confectioners with one-tenth as many jobbers?"

There's the question. The answer is that the candy jobber, with only a letterhead and a garage, can go forth with but a single talking point—"I'll sell you same goods for less money." He cuts the usual jobbing margin to get by. A cut price is his only sales weapon. And he cuts especially on those staple standard items that command the largest sales—same lines that the legitimate jobber must depend on to remain in business.

A constant attendant at bakers' conventions declared, as he listened to the speeches at our recent convention, that he could give all of them blindfolded after the first ten sentences of each had been spoken. The problems were fundamentally identical.

The fly-by-night bread jobber formerly bought bread at the bakery and owned his own delivery route. Each was always clamoring for cheaper and still cheaper bread. Why? Because of tricks by which other jobbers were winning more welcome in retail grocery stores than he could.

One such fly-by-night jobber was paying the grocer for "display space" on which to show his bread. That was a secret price rebate, and was meant to win a chance for this driver's goods against any competitor.

When all the jobbers were instructed to hold to a certain price because the bread manufacturers could not keep up a constant deflation of prices, they began to resort to other tricks. One would take up ten stale loaves from one shop and deliver them as fresh to the next shop.

Another would give free bread on Mondays and still insist to his colleagues that he sold at the established price. All his receipts would prove it, too. On Mondays he simply took no receipts. Another would charge for 25 loaves and deliver 30. Thus the merry price war went on.

To what end? The large bakers had to finally take over their own routes to keep them on decent merchandising principles. That may not be practicable in the confectionery trade. But it is at least practicable to limit trading to responsible jobbing houses, with real capital invested and a real stake in the upbuilding of the confectionery business, who are aggressively covering the territory and render an efficient distributing service.



Ten Years Ahead—What?

Where is the candy industry headed for? What conditions will exist ten years hence?

In another industry a unique method was taken to find out the perspective of a decade ahead in development. This was the electrical industry. The industry was selling stock both to the public and to employees. In other decade another ten billion dollars would be put in. Just to what ends?

To get the picture of the decade ahead the Bonbright Co. offered a prize of several thousand dollars. It was a wide-open prize for which any person at all could compete. They wanted the competing prophesies dated 1935 instead of 1925. And then they wanted a picture of how the industry looked at this visionary date.

But that was only one of the prizes. They wanted a 1935 check-up on their own judges of 1925. So they proposed that all the competing papers be filed and reread in 1935. Then the paper that seemed nearest the truth, as shown at that date by hindsight instead of foresight, should be awarded a second prize.

Several hundred contestants participated in the contest. When it came to picking a winner the laurels fell not upon an electrician at all, nor anybody connected with the industry. The winner was a young college man, David Cowan, who was in the insurance business. His interest in electricity was just that of a citizen. He pictured the world as electricity was making it over.

His winning paper now reposes with all its

competitors awaiting the year 1935, when it is to be rejudged in the light of actual achievements. The mere publication of this paper has forced all electrical leaders to focus their thought on the high spots the prize winner picked out. It may be that by merely declaring the potential power of the industry to do good he has coaxed progress along the lines he laid down so that he will create out of his own paper a vested interest in the second prize as well as in the first.

The candy industry would benefit from such a composite prognostication. It is easy to predict some of the major trends the prize-winner will deal with. The candy industry is going through such an interesting transition that there is ample inspiration for thinking men inside and outside the industry to write up a very interesting paper on a review and forecast. The mere spreading of such a prize competition appeal throughout this industry would stimulate constructive thought and action, we believe. The proposal looks so good that we are working out the details to submit at an early date.



Between a Sale and Re-Sale

Where are most sales lost? A study in several industries indicates that it is between the first and second sale.

A buyer takes a box of candy from a store window and has high hopes that his best girl will be well pleased. She opens it—and says she does not like dark chocolate. He looks down dismally and sees that only that kind are present. Or she says the candy is stale. He instantly associates these qualities with the brand on the box.

It may be the only box of stale goods sold in a year, and the manufacturer may make dozens of other assortments which he could have obtained by learning his girl friends' tastes in candy more intimately. But he holds it against the label and tries to please her by shopping among other brands.

How many manufacturers watch that one point—the point of the relationship of the first sale to the first resale?

"I never made a sale in my life," declared Maurice Rothschild, when asked to name the secret of his great success as a clothing merchant. "I always *made a resale*. That is, I never thought of a new customer as a one-time buyer. I always wanted to sell him what would bring him back. I fight a dissatisfied customer as I would the plague—to cure his mind of that attitude, for it is destructive far beyond all possible cost of redeeming his good will."

Candy that is not winning resales in profitable volume can well be taken off the market.

WHY?

Why is the Advertising and Educational Campaign advisable and necessary to improvement of conditions within our industry?

The majority in our industry know why, but some are yet skeptical or don't understand and this message is for them.

by V. L. Price

President National Confectioners' Association

THE industries which found themselves in the same position that our industry is in, corrected the conditions by Cooperative Advertising and Educational work. Many industries did this, not just one or two industries. There is no situation in our industry that would prevent us from accomplishing the same thing. We know this because we have studied the plans of other industries and have carefully compared conditions in these industries with our own.

Present Conditions Within Our Industry Are Not Automatically Going to Get Better

Anybody who has been in the candy business for any length of time knows that by some hook or crook the predicted failures seldom happen, and when they do there is a settlement and they are soon back in again, and that the survival of the fittest business is darn expensive to all concerned and doesn't work out. We have to do something if we want things better and that something is to increase the consumption of all kinds of candy by Advertising and Educational work.

How Can This Be Done?

You know that a lot of people are not eating candy because they believe it makes them fat, decays their teeth, and is bad generally for their health, and these people do not confine their prejudice to Package Goods, Bar Goods, Bulk Goods, or Penny Goods. They are people who eat all kinds of candy. Other industries know this prejudice against candy and are encouraging it in their advertising.

No one knows what the increase in candy consumption would be if these prejudices were removed and no one knows what effect it will have if it is allowed to go on uncorrected, but it is certain that it is a very serious condition and

materially curtails the consumption of candy of all kinds.

We have the very best arguments to offset these prejudices, but we can't present them to the consumer unless we advertise and do educational work in a cooperative way. No individual manufacturer is going to spend his good money telling the public to eat anybody's candy, so the prejudice goes on growing naturally and is pushed along by competitive advertising of other industries. If we don't do something now, the time will come when we will have to.

Can New Uses for Candy Be Established?

Suggestions of the right kind we all know are followed by the consuming public. New fads and new customs are coming into existence every day as the result of suggestive advertising. But these are general fads and customs and are not applied to some individual's product. It is almost impossible for an individual to create them; they must be created collectively, where each one can pay his share of expense and get his share of benefit. For instance:

We can get people into the custom of taking home candy for Sunday. We know because we've done it.

We can get people to have a Candy Jar at home, full of candy.

We can establish the fad of serving candy as a dessert in private homes, and at hotels and clubs and at parties.

We can create the custom of giving candy on birthdays, anniversaries, commencement, etc.

Our Holiday Sales in Jeopardy!—Why?

We know the holidays make our seasons and we know how rotten business is in what we call off seasons. Other industries are advertising for the consumer's dollar, for their wares, on all

the holidays, and they are taking these dollars away from us and unless we do something to offset this, we will lose out to these other industries and our seasonable business will grow less instead of larger, as it should do every year.

By advertising we will enlarge the seasonable opportunities for all of us—we will have a sold and ready public, while now the public is sold on other products because other products are advertised collectively as an industry and ours are not.

If I were to answer the question, What's the matter with the candy business? I'd be forced to reply, "Lack of constructive cooperative effort by the industry."

We all want things to get better, but we're unwilling to spend the time and money necessary to make them better.

The whole basic idea of cooperative expenditure is that each one pays his share according to his share of benefits.

How Will It Benefit the Retailer?

The plan was endorsed by the Associated Retail Confectioners and is receiving their financial support, which shows they believe in it.

The retailer, of course, must be benefited if the plan is a success, because he is the medium through which all efforts must function. In increasing the retailer's opportunities to do business and by showing him how to cash in on these opportunities lies the whole purpose and intent of the plan. The manufacturer and jobber automatically get the benefit of this work.

How Will It Benefit the Jobber?

You can't benefit the manufacturer without benefiting the jobber. Any increase in business on the part of the manufacturer must reflect itself to the jobber because it is all the result of increased business for the retailer.

SALESMEN

Salesmen will be told what we are trying to do and how to do their part in helping us do it. We won't interfere with individual policies of their houses, but will give them a broader view of what is being done, and they will be better salesmen.

Men in the industry know that a National Salesmen's Manual, containing practical ideas and suggestions, is needed. In the concerted intelligent action of salesmen much power for good lies. There is an appalling lack of training amongst the salesmen of our industry and with a man in our employ scientifically and practically helping the salesmen, much good must surely come. If you had better salesmen you'd sell more candy. You know this is true and how are you going to make your salesmen

better except by some sort of cooperative educational plan?

MANUFACTURERS

We can, through all the Educational and Trade Extension work above outlined and added to it the advertising, create greater opportunities and better methods within our industry that will reflect themselves to all manufacturers.

How many manufacturers know what is done with their goods after they are sold to the jobber and retailer? Mighty few, and if they did know they'd realize how sales of meritable candy are held back by poor merchandising methods. The methods can be improved by the right kind of cooperative work with jobbers and retailers.

What Support Are Different Classes of Manufacturers Giving the Campaign?

Every class of manufacturer, Bulk Goods, Penny Goods, Bar Goods and Package Goods, are supporting the plan liberally, and each one has carefully weighed the benefits of the plan to them. The list of contributors will show that this support is being given by the leading manufacturers in our industry. The fact that these manufacturers are doing this should be the strongest argument in favor of the benefits of the plan to all classes of manufacturers. No matter what arguments we might make, they would mean little if this support were not so generally given by these manufacturers.

The industry has never before so generally and liberally supported any work to be undertaken by this Association and hundreds of prominent members of the industry have given their time, money and personal efforts in helping to bring the financing of the work to a successful conclusion.

The Educational and Trade Extension Part

A purely advertising plan could not succeed without Educational and Trade Extension work and the latter cannot be done effectively without Advertising. They are both necessary to each other.

The Educational Work will have five separate divisions:

Retailers
Jobbers
Salesmen
Manufacturers
Public.

Each one of these demands separate attention, as each one's part is carrying out the general plans and lining up with the Advertising is different, though they will all be coordinated. To handle this work it is going to require the services of competent and experienced men in charge of each branch of the work and men

fully qualified for this service have been located and are obtainable if the total sum necessary to carry out the plan is raised.

What will and can these men do?

RETAILER'S PROBLEM

The Retailer's problem is one of merchandising, which involves display, advertising, special sales, pricing and turnover. Enabled to know how to do these things right, and provided with the ways and means of doing them, Retailers will not only sell more candy, but they will buy more intelligently and make more money.

The Retailer who buys your candy will know better how to sell it, no matter whether it is Bulk Goods, Penny Goods, Bar Goods or Package Goods.

The man who will have charge of this work will be the Contact man with Retailers. He will prepare all the Booklets and Circulars going to them, will carry on all correspondence with them. He will attend their group meetings and talk to them.

He will let them know about the advertising to be done and show them how to tie up with this advertising. The individual manufacturer, jobber and salesman will find the Retailer prepared and informed of each special feature, whether a holiday or a special sales idea. The Retailers who will receive this service will be those with whom our subscribers are doing business. What the work will do is to sell each idea to the Retailer and show him how to carry it out.

The man to do this work has been located and is obtainable. He has already accomplished in a smaller way for a group of Retailers the things we want to put over in a bigger way.

The Retailers' Sales Manual of our Association will be the Retailers' guide for good merchandising.

JOBBERS

There is much room for Educational work amongst Jobbers, and our plan contemplates the employment of a man who will work with Jobbers and for Jobbers. He will study their problems, prepare and issue the Jobbers' Manual, attend their meetings, help them organize, show them how to tie up with the advertising. By our cooperative financing we can hire the best man in the country for this job. He will be a real constructive man, not a hot air merchant. He will show the Jobber how. There are many angles to the service he can render and the industry is in need of such a man.

THE PUBLIC

The public will be reached through many channels and educated as to the real merit of candy as a food.

Can there be any argument more plausible and simple than that a product, which is a combination of acknowledged wholesome food products, must itself be a wholesome product?

A satisfactory answer for every argument against candy has been worked out and these answers will be broadcast to the public through our educational work as well as our advertising.

The "Net" of It

If we want things better, we must do something to make them better, and to do this at a reasonable cost to all of us we must contribute collectively in order to raise the money necessary to do the job right.



God's out-of-doors in New England where some of us recuperated from the tropical zone of the Boston Convention a year ago.

The Mischief in the Fondant Barrel

How an epidemic of fermented and bursted chocolates was checked

by Donald Bethune Shutt

Bacteriology Department, Ontario Agricultural College, Guelph, Ont.

(Weinzirl (1) has reported a systematic investigation of this problem. He states that *B. sporogenes* is the chief cause and that yeasts may be a cause. Egg albumen was proven to be the source of *B. sporogenes*.)

DURING the past year, a manufacturer of chocolates experienced considerable losses due to the cracking and leaking of chocolate candies in storage. As a result, the following investigations were made to locate and remedy the cause.

Process of Manufacture of the Chocolates

The chocolates were made by rolling the fondant centers in starch or powdered sugar, dipping them in chocolate and setting them aside for hardening. The fondant cream contained the following ingredients: corn syrup, powdered sugar, egg albumen and tap water. These were mixed according to formula and boiled for thirty minutes. The mixture was then removed from the kettle and poured into a large wooden barrel for storage purposes. Portions were removed as desired for rolling and dipping, *but the barrel was seldom completely emptied and cleaned before the next batch was poured in.* The finished chocolates were stored at 68° F. for not longer than two weeks, after which they were taken to the store and either held on the counter or kept in show cases until sold. The temperature of the store varied between 68° F. and 72° F., depending upon the weather.

Laboratory Examination

The chocolates submitted were all either cracked or broken; some had portions forced out as if pressure was behind them. The interior was found to be spongy with numerous small holes throughout the center. There was little or no odor and the taste was not unpleasant. The hydrogen ion concentration in all samples proved to be $\text{PH} = 5 - 6$.

Due to the low hydrogen ion concentration of the interior of the broken chocolates and the presence of a greater proportion of carbohydrates than protein, yeasts were suspected to be the cause of the bursting.

To determine whether yeasts or bacteria were

responsible, the following media were employed in the investigation: Nutrient Agar, made according to Standard Methods of Milk Analysis (A. P. H. A.), Nutrient Broth (S. A. B. Pure Culture Methods), Sabourauds Agar (Difco), Dextrose Peptone Water of the following formula: Dextrose 10 grams, Peptone 1 gram, Water 100 cc. This was placed in fermentation tubes. Imitation chocolates were also made in glass test tubes, for observation purposes, by pouring in ten grams of nougat cream, plugging with cotton and steaming for three successive days for twenty minutes. After inoculation with the organisms, the nougat cream was covered with paraffin wax to a depth of half an inch.

The interior of the chocolates was first examined. Bacteria grew on the nutrient agar cultures but fished colonies from these failed to produce gas in the dextrose peptone water fermentation tubes at either 68° F. or 90° F. Pink and white yeasts were numerous on the Sabourauds agar cultures and fished colonies from these produced much gas in the dextrose peptone water fermentation tubes at both temperatures. Transfers from the fermentation tubes to the imitation chocolates gave rise to much gas and finally complete expulsion of the paraffin plugs when incubated at 68° F. The time required for expulsion was twenty days at 68° F. and from five to eight days at 90° F. Microscopical examination of the fluid in the fermentation tubes and the imitation chocolates showed yeasts only. It was later found that the pink colonies mentioned above contained both pink and white yeasts and that the pink yeasts were incapable of producing gas in dextrose.

Portions of the raw materials were examined and plated out, but no yeasts were found. A small amount of gas was produced in the fermentation tubes, but upon microscopical examination the organisms proved to be bacteria. The gas was less than one per cent.

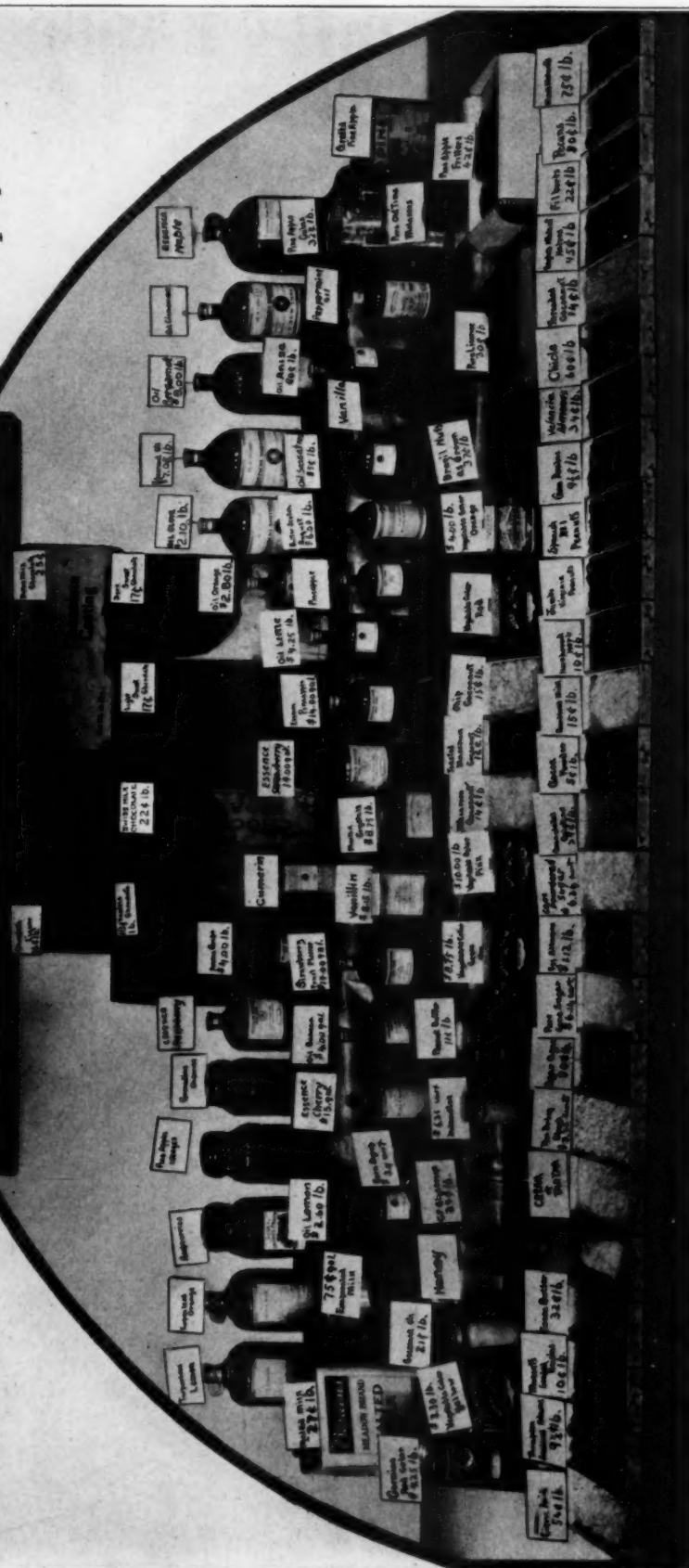
A sample taken from the kettle after the ingredients had been boiled for half an hour proved to be sterile on all media. Apparently boiling for half an hour destroyed the original organisms in the raw material.

(Continued on page 44)

**SUGAR is a SMALL item in the cost of candies
Here are some of the expensive
materials used in its manufacture.
Labor~Pails~Boxes~Wrappers
are also costly**

62 Items of Supply
Average \$1.92 per pound

1/4 Items of Supply
Average \$10.91 per gallon
[\$1.36 per pint]



The Retail Druggists of Dayton Have a Different and More Favorable Idea About What Constitutes Candy Costs After a Trip Through the Factory of Underwood Talmage Co., and Viewing the Above Display of Confectioners' Raw Materials with Their Respective Costs. (See article on opposite page.)

Look at the Price of Sugar Compared to the Other Ingredients in Confectionery

The exhibit shown on opposite page was displayed for benefit of the Retail Druggists' Association by The Underwood Talmage Co., Dayton, Ohio, for the purpose of counter-acting the more or less popular wail about:

"Look at the price of sugar and the price you ask for candy!"

TO help make good candy merchants and candy boosters out of retail druggists was the objective of the display, shown on opposite page, which was set up in the factory of Underwood-Talmage Co. of Dayton, Ohio.

"We gave them (The Retail Druggists' Association) a dinner," said Mr. McGuire, Sec.-Treas. of the company, "Showed them through the plant, explained how the candy was made and this display helped to visualize quickly and forcibly the materials used and the cost of the various items of supply compared to sugar which is almost the lowest priced item in the lot and far from dominates the list of materials used in candy."

It was quite a revelation to them to see the number of different ingredients that enter into the manufacture of candy and the process of manufacture, all of which was new and very interesting to them.

This was an effort on our part to see what

good it would do towards stopping the continual talk of "Look at the price of sugar and the price you ask for candy." We believe it has done some good, as we have heard from it a number of times from our salesmen.

A sample of the following ingredients were displayed and the cost of each respective item explained. We also endeavored to make clear the fact that these material costs, which averaged nearly \$2.00 per pound, were only a portion of the final cost—that packing and merchandising materials were another substantial addition to candy costs and then add costs of skilled labor and the necessary overhead expense of maintaining a fit place for manufacturing a food product on a commercial scale and an organization to give dealers the service they have reason to expect.

"We believe this demonstration helped the dealers to understand the candy industry so that they will display and talk candy more intelligently and enthusiastically."

| | |
|--------------------------|------------|
| Chocolate Liquor | \$0.16 lb. |
| Malted Milk Chocolate... | .25 lb. |
| Vanilla Chocolate | .18 lb. |
| Milk Chocolate | .22 lb. |
| Light Sweet Chocolate... | .17 lb. |
| Dark Sweet Chocolate... | .17 lb. |
| Aroma Grape | 4.00 lb. |
| Oil of Orange | 2.80 lb. |
| Oil of Clove | 2.10 lb. |
| Oil of Spearmint | 7.05 lb. |
| Oil of Peppermint | 15.00 lb. |
| Oil of Bergamot | 8.00 lb. |
| Oil of Cassia | 2.45 lb. |
| Malted Milk | .27 lb. |
| Oil of Lemon | 2.60 lb. |
| Corn Syrup | 3.11 cwt. |
| Oil of Banana | 4.00 lb. |
| Vanillin | 8.15 lb. |
| Menthol Crystals | 8.75 lb. |
| Oil of Lime | 4.25 lb. |
| Butter Scotch Bouquet... | 6.00 lb. |
| Oil of Sassafras | .85 lb. |
| Oil of Anise | .80 lb. |
| Pineapple Cubes | .32 lb. |
| Carmin Red Color | 4.25 lb. |
| Vegetable Color Yellow.. | 3.30 lb. |
| Cocoonut Oil | .21 lb. |

| | |
|---------------------------|-----------|
| Glycerine | .24 lb. |
| Nulomoline | 6.35 cwt. |
| Peanut Butter | .11 lb. |
| Vegetable Color Green... | 8.75 lb. |
| Vegetable Color Pink... | 10.00 lb. |
| Macaroon Cocoonut | .14 lb. |
| Toasted Cocoonut | .12 lb. |
| Chip Cocoonut | .15 lb. |
| Vegetable Color Orange.. | 4.00 lb. |
| Brazil Nuts | .37 lb. |
| Pure Licorice | .30 lb. |
| Pineapple Fritters | .42 lb. |
| Citric Acid | .54 lb. |
| Seedless Raisins | .09½ lb. |
| Muscat Raisins | .10 lb. |
| Cocoa Butter | .32 lb. |
| Cream of Tartar | .28 lb. |
| Thin Boiling Starch | 3.75 cwt. |
| Agar Agar | .90 lb. |
| Pure Cane Sugar | 6.14 cwt. |
| Egg Albumen | 1.12 lb. |
| Powdered Cane Sugar | 6.34 cwt. |
| Granulated Gelatine | .39 lb. |
| Cocoa Powder | .08 lb. |
| Fowdered Milk | .15 lb. |
| Horehound Herb | .10 lb. |
| Peanuts No. 1 Spanish... | .09½ lb. |

| | |
|-------------------------|---------|
| Gum Arabic | .34 lb. |
| Valencia Almonds | .63 lb. |
| Chicle | .60 lb. |
| Threaded Cocoonut | .14 lb. |
| English Walnuts | .45 lb. |
| Filberts | .22 lb. |
| Pecan (halves) | .80 lb. |
| Black Walnuts | .75 lb. |

Average cost per pound..\$1.92+

| | |
|-----------------------------|------------|
| Terpeneless Lemon | 15.00 gal. |
| Terpeneless Orange | 21.00 gal. |
| Terpeneless Raspberry .. | 14.00 gal. |
| P. A. Wedges | 2.30 gal. |
| Grenadine Cherries | 3.60 gal. |
| Essence of Raspberry | 14.00 gal. |
| Essence of Maple | 8.50 gal. |
| Evaporated Milk | .75 gal. |
| Essence of Cherry | 15.00 gal. |
| Strawberry Fruit Flavor... | 14.00 gal. |
| Essence of Strawberry | 14.00 gal. |
| Essence of Pineapple | 14.00 gal. |
| Vanilla | 16.00 gal. |
| Grated Pineapple | .60 gal. |

Average cost per gallon.\$10.91+

The N.C.A. and U.S. Bureau of Chemistry FOR PACKING DEPARTMENT

The significance to candy manufacturers of this report on research work lies mainly in its application to the production of chocolate work in the quiet "off season" periods for storage. Stabilized production means better labor conditions and minimum costs.

The Application of Air Conditioning Is Essentially an Engineers Job

THE service extended without charge by our engineering staff in making intelligent surveys of manufacturing conditions, diagnosis of production troubles, suggesting floor layouts, etc., has proven a very valuable asset to many manufacturing confectioners. There are no "white elephants" in the wake of Bentz installations because each job is engineeringly correct and guaranteed. Every variable in factory conditions (and there are many) which might affect the successful performance of the equipment—especially air conditioning—is taken into account; Bentz specifications represent a made-to-measure fit for each individual installation.

If you will be open to a consultation you will receive an unbiased report without any obligation whatsoever.



Packing department at Thin Shell Candy Co., Chicago, showing the Bentz "CHILLBLAST" which make it possible to pack hard candy every day in the year regardless of what kind of weather Dame Nature serves outside the factory walls.

P. S.—Remember—THE BENTZ "COLDBED" is the most modern development in chocolate cooling and packing equipment. Connects directly to chocolate dipping machine. Nearly 500 Coldbeds in use in confectionery and biscuit industries.

National Confectioners Association of the United States

OFFICE OF
WALTER C. HUGHES
SECRETARY-TREASURER
1921 CONWAY BUILDING
111 W. WASHINGTON ST.

REPORT ON COOLING of CHOCOLATE COATED CANDY

To Our Members:

A series of experiments and investigations have been conducted by the Bureau of Chemistry, United States Department of Agriculture, Washington, D. C., under the direction of the Committee on Confectionery, of which Dr. H. S. Paine is Chairman, relative to the effect of Cool Storage on the quality of chocolate coated candy.

Different grades of each type or kind of candy boxes and wrapped in the customary manner.

A record was kept of the humidity and temperature of the inside of the boxes and of the outside atmosphere at the time the candy was withdrawn under various conditions of low humidity.

The experiments proved conclusively that from determining the nature and extent of the assumed candy from cool storage into outside atmosphere, be withdrawn into an outside atmospheric condition.

Chocolate coated candy, when packed in boxes and relatively low humidity will not be affected.

6. The experiments have shown that these investigations are being conducted in order to obtain more exact data.

semiofficially recommend Air Conditioning MENF CONFECTIONERY PLANTS



Association
the United States

OFFICE OF
TER C. HUGHES
SECRETARY-TREASURER
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CHICAGO, ILL.

June 21, 1926.

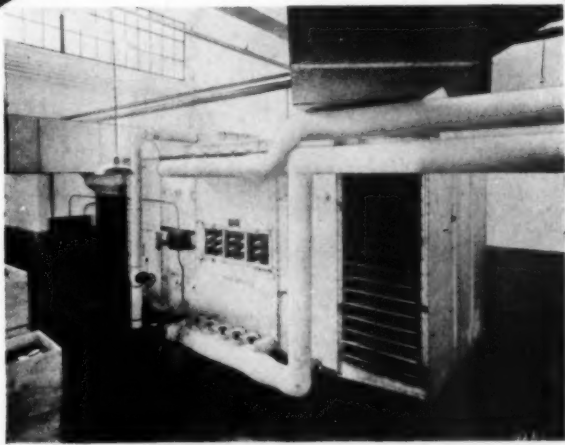
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chocolate coated candy from cool storage
spheric high humidity should be avoided.
6. The investigations have not been completed and will be continued in
rectly to the committee and a final report thereon will be made at a later date.
estigations and a more ex-

Sincerely yours,

WALTER C. HUGHES,
Secretary.



One of three "CHILLBLASTS" in plant of Sanitary Food Manufacturing Co., St. Paul, one of which controls three different rooms (chocolate dipping, chocolate storage, and hard candy departments), each at different temperature and relative humidity.

Another "CHILLBLAST" controls the atmospheric conditions in their icing department, and a third "CHILLBLAST" controls a remote biscuit (chocolate) coating department.

Other "CHILLBLAST" Boosters

- | | |
|---|--|
| Cracker Jack Co., Chicago | Henry Heide, Inc., New York |
| Thin Shell Candy Co., Chicago | James Bros., Atlantic City |
| Curtiss Candy Co., Chicago | P. Margarella, New York |
| Walter O. Birk Co., Chicago | Gurley Candy Co., Minneapolis |
| Paul F. Beich Co., Chicago and Bloomington | Strietman Biscuit Co., Cincin- nati |
| United Drug Co., Boston | Williamson Candy Co., and many others |
| Wm. Luten, Inc., Reading | |

THE "CHILLBLAST" is a dehumidifying apparatus of patented design embodying advanced engineering principles which are responsible for its unerring performance and universal popularity wherever an accurate control of atmospheric conditions is wanted.

The "CHILLBLAST" will automatically control one or more rooms at any desired degree of temperature and relative humidity and its low cost will surprise you. May we submit floor layout and estimate.

BENTZ ENGINEERING CORP.

AIR CONDITIONING ENGINEERS

661 Frelinghuysen Ave.
Chicago, 123 W. Madison St.

Newark, N. J.
122 Greenwich St., New York

Research on Soft Grained Candies

Process patent claiming greater fondant qualities—softness of grain—dry appearance, greater keeping qualities, demonstrating first practical use for refined corn sugar in manufacture of confectionery

Patent No. 1551175 issued to

Maximillian A. Schneller

EDITOR'S NOTE.—*It has been the belief of some technical candy men for years that refined corn sugar would find a stable place in the manufacture of confectionery, not as a substitute for either corn syrup or sucrose (cane and beet sugar) but stand on its own merits by contributing properties necessary for certain desired re-*

sults in candies, such as nougat work and other specialties which lend themselves to a treatment involving the properties and characteristics of corn sugar. Mr. Schneller and associates have worked on this problem diligently the past few years with some success.

The following is the full text of the patent:

The Full Text of the Patent

To all whom it may concern:

Be it known that I, Maximilian A. Schneller, a citizen of the United States and resident of New York City, County of Richmond and State of New York, have invented certain new and useful improvements in grained confections and processes of making same, of which the following is a specification:

Three Classes of Confections

In general confections may be divided into three classes:

First, hard candies, consisting of amorphous sugar or mixture of sugars practically free from moisture.

Second, soft ungrained confections, consisting of syrups containing substantially no sugar in crystalline form and solidified with materials of a gelatinous nature. Examples of this class are gum drops, jellies, jujubes, ungrained marshmallows, nougats and caramels.

Third, candies containing fine sugar crystals surrounded by saturated or super-saturated solution of sugar, constituting a liquid or syrup phase which may also contain gelatinous materials as listed in the preceding class. This class of confections is known as grained confections and is exemplified by confections known as fondant, fudge, grained caramels, grained marshmallows, etc.

My invention relates to the third class of soft grained candies. According to customary methods of manufacture, the solid sugar phase of grained confections consists principally of sucrose, the structure of which is modified by

additions of other sugars, such as corn syrup, invert sugar, etc., principally in the liquid phase.

Improving Soft Grained Candies

I have discovered that grained confections can be improved in a variety of ways, but particularly as to softness, fondant qualities and the capacity for maintaining freshness, by the use of certain other sugars and in such proportions as will be evident hereinafter.

When the solid sugar phase of confections consists chiefly of sucrose, as is customary, it will be found that, due to the shape and compactness of the sucrose crystals, the supporting structure formed by them has a comparatively low absorptive capacity, so that only a comparatively small amount of liquid phase may be present without the candies being moist to the touch. Furthermore, due to the comparatively high solubility of sucrose, the capacity of the liquid phase for dissolving other sugars which it might be desirable to add is restricted.

I have now discovered that by causing the solid phase to consist of a sugar yielding softer crystals and of less solubility than sucrose, such as dextrose hydrate or lactose, for example, there may be produced a solid supporting crystal structure having a much greater absorptive capacity, as well as a liquid phase permitting of a greater variation in the sugar content.

The Advantages

Several important advantages result from so constituting the solid phase of the confection, of which the following are some:

1. The softer crystals of such a sugar pro-

duces greater smoothness than the harder and more compact sucrose crystals.

2. The increased absorptive capacity of the solid phase permits a larger amount of the liquid phase without the candy being wet to the touch. This results in greater softness, better fondant qualities and increased keeping qualities.

3. In consequence of the lower solubility of the sugar constituting the solid phase, the sugar dissolving capacity of the liquid phase is correspondingly increased, permitting the use of a greater percentage of other sugars in the syrup phase, such as sucrose, corn syrup, maltose or levulose, any or all of which may be dissolved therein to the saturation point. In this way the inherent qualities of the confections may be widely varied. For example, by the use of levulose in sufficient quantities the desired amount of hygroscopicity may be imparted to the confection.

I prefer to use dextrose hydrate (refined corn sugar) to constitute the solid phase, as this sugar crystallizes in extremely small, mushy needles of high absorptive capacity. However, other sugars of comparatively low solubility, such as lactose, may be used either alone or in combination with each other, or with dextrose, to constitute the solid phase.

A further advantage of the use of dextrose resides in the fact that it is ordinarily available as the hydrate containing one molecule of water, whereby it may be compounded with the addition of little or no added water, its greatly increased solubility at higher temperatures causing it to melt in this water of crystallization at comparatively low temperatures. (In sucrose (cane sugar) confections, an excess of water must be used in the compounding which must be gotten rid of by boiling.) In other words, when dextrose is used in the necessary quantities, so-called "cold process" candies may be made by melting together the ingredients without boiling—at say, below 200° F.

Example No. 1—Grained Nougat

My invention may be best understood by reference to the following examples, which are illustrative thereof:

I. For the production of a so-called grained nougat, $2\frac{1}{2}$ parts gelatine are dissolved in 5 parts of warm water, to which are added 60 parts invert sugar (containing 20% water) and 35 parts dextrose hydrate. The mixture is heated to preferably not over 170° F. and then beaten in a nougat heater. After cooling below 120° F. the batch is seeded with a small amount of invert sugar to insure graining over night. The final confection contains in its syrup phase approximately 17 parts water, which at room temperature holds in solution about an equal

amount (17 parts) dextrose, leaving 42 parts dextrose hydrate (approximately 24 parts of which were added with the invert sugar) in the solid phase. The levulose, being the most soluble of the common sugars, remains entirely in the liquid phase.

It will be noted that in the above example a grained soft candy is produced containing no sucrose at all. It will keep fresh without chocolate coating indefinitely, due to the high absorptive capacity of the supporting structure of dextrose crystals and to the presence of the hygroscopic levulose.

No. 2—Fondant

II. For the production of a fondant, 25 parts powdered sucrose is mixed with 30 parts invert sugar of the same composition as above and 40 parts dextrose hydrate and 10 parts water and melted at about 170° F. After cooling below 120° F., the mixture is seeded with finely-grained invert sugar or dextrose. After forty-eight hours or longer, when crystallization is complete, the mixture is beaten in a mixer to break down the interlocked crystals. The resulting fondant may be melted with a freshly prepared portion or "bob" of identical or similar composition, flavoring and coloring materials added and the fondant cast in suitable molds. The final confection will contain in its syrup phase approximately 16 parts water, sufficient to dissolve the entire amount of sucrose and levulose (present in the invert sugar).

No. 3—Grained Caramels

III. For making grained caramels, 25 parts of invert sugar and 40 parts dextrose hydrate are melted together, 10 parts powdered skimmed milk are then added and the mixture beaten to a smooth paste. Three parts of gelatine previously dissolved in 9 parts of water are added and the beating continued until the desired degree of lightness is obtained. An emulsion formed of 20 parts of butter or coconut oil in 20 parts maltose or invert sugar syrup are now mixed in, flavoring material added and the mixture poured into trays or starch molds. In this example the final quantity of water is approximately 18 parts, sufficient to dissolve the 26 parts of maltose or levulose added in the invert sugar, leaving an excess of dextrose hydrate to form the solid phase.

No. 4—Chocolate Fudge

IV. For making chocolate fudge, the following ingredients in approximately the following proportions are taken:

20 parts powdered sucrose
30 parts invert sugar, containing 20% moisture
40 parts dextrose hydrate
10 parts water.

The materials are melted together below the boiling point, 20 parts cocoa added and mixed in the beating machine. After cooling the mass is seeded in crystallized dextrose or invert sugar and poured into trays. The final product contains in this case about 16% of moisture dissolved in its syrup phase, which is sufficient to hold in solution the sucrose and levulose present.

As a further example of a fondant, 30 parts lactose are boiled in a candy kettle with enough water to effect solution and cooked to a boiling point of 230° F. Twenty-five parts of powdered sugar and 30 parts invert sugar of the same concentration as above are then added and melted at 170° F. After cooling to about 100° F. the mixture is seeded with fine lactose crystals or conveniently a portion of a previously prepared grained batch of the same or similar composition. After 48 hours or longer, when crystallization is complete, the mixture is beaten in a mixer to break down the interlocked crystals. The resulting fondant may be melted with a freshly prepared portion of an identical or similar composition and finished as in Example II.

Characteristics of These Improved Confections

In general my improved confections are characterized by extreme softness of grain, relatively dry appearance and high keeping qualities. In addition to the other reasons given I prefer to use dextrose hydrate to constitute the solid phase of my improved confections, due to its easy availability, but other sugars as, for example, lactose, may be used, which on account of its lower solubility is even more suitable than dextrose, but due to its higher price is more limited in its application.

In the appended claims it will be understood that the expressions, "solid phase" and "liquid phase," refer to the product at room temperature.

I claim:

The Appended Claims

1. A grained confection of dry appearance and relatively high keeping qualities, the solid sugar phase of which comprises a supporting structure substantially of absorptive, mushy crystals of less solubility than sucrose, while the liquid sugar phase contains sugar in greater concentration than the saturated solution of the sugar or sugars forming the solid phase.

2. A grained confection of dry appearance and relatively high keeping qualities, the solid sugar phase of which comprises a supporting structure substantially of dextrose hydrate, while the liquid sugar phase contains sugar in greater concentration than the saturated solution of dextrose.

3. A grained confection of dry appearance and relatively high keeping qualities, the solid sugar phase of which comprises a supporting structure substantially of absorptive, mushy crystals of less solubility than sucrose, while the liquid sugar phase contains sugar in at least as great concentration as a saturated solution of sucrose.

4. That step in the method of making a grained confection which consists in melting together dextrose hydrate and other sugars of greater solubility in the presence of an amount of water not substantially greater than is to be present in the final product.

5. That step in the method of making a grained confection which consists in melting together dextrose hydrate and other sugars of greater solubility in the presence of an amount of water not substantially greater than is to be present in the final product, the proportions of said sugars being such as to render the solid phase of the final product substantially of dextrose.

6. That step in the method of making a grained confection which consists in melting together dextrose hydrate and other sugars of greater solubility in the presence of an amount of water not substantially greater than is to be present in the final product, the proportions of said sugars being such as to render the solid phase of the final product substantially of dextrose and cooling and seeding with dextrose in crystalline form.

MAXIMILIAN A. SCHNELLER.

The following excerpts are quoted from comments by The Nulomoline Co. to whom the patent has been assigned.

"THE basis of the new process is the fact that the dextrose crystal, which is the technical name for refined corn sugar, is a soft spongy substance with considerable ability to absorb moisture. The cane sugar crystal, which has to date always been the basis of candy making is a hard, crystalline substance with little power to absorb moisture, and which, in contradistinction to dextrose, is quickly dissolved into a syrup when in the presence of an excess of moisture, whereas dextrose, having relatively less solubility, absorbs the moisture rather than being dissolved by it.

"The availability in large quantities of a new sugar, such as refined corn sugar, gives rise to considerable possibility for new and original developments in the candy industry—an entirely new type of candy, which can roughly be placed in a marshmallow-nougat group.

"Based on this introductory paragraph, the wide-awake candy maker will already begin to sense a possible use for this new sugar. A mass of soft, porous crystal, such as dextrose may be made to produce, gives us at once the ideal basis for either marshmallow or nougat, or a hybrid confection related to both. Going a step further by filling the spongy structure of this dextrose mass with a moisture retaining sugar, such

as invert sugar, we have in addition to a hybrid marshmallow nougat, a confection with almost unlimited keeping powers. The novelty of this new confection lies principally in the paradoxical use of invert sugar. Heretofore, this product was used principally as a 'doctor,' or in other words, as an agent to prevent the graining of candy. Now we reverse the process and use invert sugar as the medium for actually producing the particular type of grain desired.

"One of the chief manufacturing differences to be found in the making of candies by this new process is the fact that while the candies are heated they are not as a whole cooked. In order to give practical illustration of the working of this new process we suggest the following formula for short nougat be tried:

SHORT NOUGAT

"2½ pounds of gelatine to be dissolved in 5 pounds of water, then added to 60 pounds of Nulomoline and 36 pounds of dextrose hydrate. The whole batch is stirred and heated together to 170 degrees F. until a clear syrup is obtained. The mixture is then placed into a marshmallow beater and beaten to the desired degree of lightness. Color, flavor, nut meats, fruit, etc., can be added in any quantity and combination desired.

"During the heating of the batch it should be cooled so that it will finish below 120 degrees F. After the heating is finished and the temperature last mentioned obtained, a small amount of congealed Nulomoline is stirred through the batch to produce grain. The nougat is placed in trays and set aside until fully grained, then cut as usual.

"This nougat is remarkably tender and while it con-

tains and retains an unusually high percentage of moisture, it is not sticky and will not sweat when exposed to what might be termed abnormal conditions of humidity. Some idea of the unique results obtained can be secured by quoting the following comments made by candy makers after first examining these new confections. One remarked that it should be called the 'kid glove candy' for one could break and handle it without there being any danger of soiling the gloves. Another, who was particularly impressed by the unusual coolness of the candy as it melts in the mouth said that it should be called 'ice cream candy.'

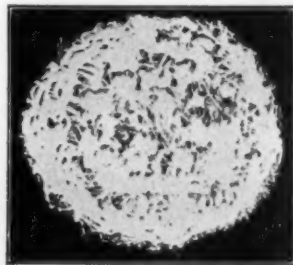
"One of the outstanding peculiarities of the nougat made by this formula is that while it had plenty of body and is able to stand the rough handling incidental to shipment as well as any nougat, it may be easily broken and what is most interesting is that the freshly broken surfaces cannot be stuck together by ordinary pressure.

"This new process has been used in the making of nougat, various combinations produced from fondant, grained caramels, fudge and experimental work is now being done on the manufacture of special kinds of marshmallows. It is not possible at this time to state the limit of the use of this new method, but it certainly is safe to say that from it will be secured some very desirable new combinations. It also seems probable that one can make use of this process to change and improve some of the older kinds of candies."

(These claims are being checked up by the technical department of THE MANUFACTURING CONFECTIONER and further discussion of this subject will appear in an early issue.—EDITOR.)



Cut No. 1. This illustration shows enlarged cane sugar (sucrose) crystals.



Cut No. 2. The dextrose (refined corn sugar) crystals pictured here are drawn to approximately the same scale as the accompanying illustration of cane sugar. A comparison of the two will show the marked difference between the size of crystals and the text explains just what the effect of this difference is.

Research on Atmospheric Conditions for Packing and Storage of Chocolates

(A preliminary report on research work to determine the proper manufacturing conditions for chocolate coated goods intended for cool storage and methods of handling in and out of storage to keep the goods in best saleable condition)

by H. S. Paine

Chemist in Charge, Carbohydrate Laboratory, Bureau of Chemistry, U. S. Dept. of Agriculture



SYSTEMATIC investigation was made of the effect of cold storage at various temperatures on the quality of chocolate-coated candy and the best conditions for withdrawal from cold storage to atmospheric temperature. This problem was suggested by Mr. Herman L. Heide of the Committee on Research of the National Confectioners' Association.

Materials and Procedure

It was planned to consider all possible factors and influences which might affect the results. Twenty-two samples of coatings were obtained from three of the leading manufacturers. These coatings represented the following types: plain liquor, bitter-sweet, sweet, and milk. Different grades of each type, varying in price, were used. All coatings were applied in three weights, as follows: 25, 35 and 50 pounds of coating to 100 pounds of centers. In addition, a few samples were prepared with still higher proportions of coating, notably in the case of milk chocolate coatings.

Portions of these various samples were placed in cold storage simultaneously, at temperatures of 22, 34, 46, 56 and 65 degrees F. Control lots, which were held as standards for comparison, were kept at 65 degrees F. The goods were packed in standard candy boxes and most of them were wrapped in the customary manner, using waxed paper or cellophane. In addition, a number of boxes were placed in cold storage without wrapping in order to determine the effect of this condition. A record of the humidity and temperature in each cold storage room, as well as of the outside atmosphere when goods were withdrawn from cold storage, was continuously kept, a recording thermometer and hydrometer being used for this purpose.

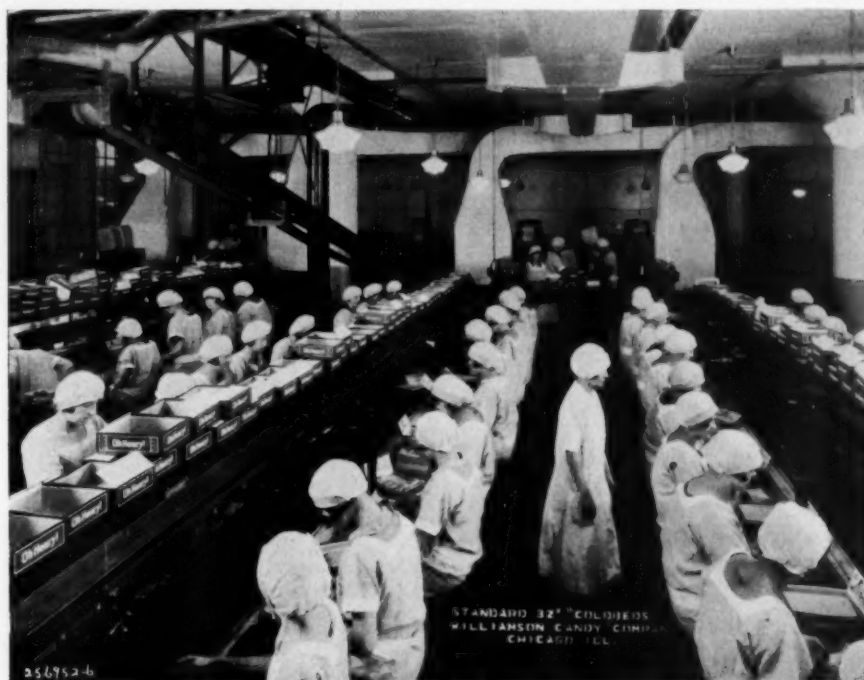
The goods were withdrawn under various conditions, for instance, from each cold storage chamber direct to the outside atmosphere and from the storage chambers of lower tempera-

tures by passing successively through each higher storage temperature so as to more gradually reach atmospheric conditions. The room in which the goods were withdrawn to atmospheric temperature was so arranged that both its humidity and temperature could be varied. Thermometers were carefully inserted in a number of boxes, so that it could be definitely determined when the contents of the boxes reached prevailing atmospheric temperature. After reaching atmospheric temperature, but before opening, the boxes were taken to the 65° room and there examined critically in comparison with the control samples which had been kept at this temperature during the entire period. Particular attention was given to such factors of quality as gloss, color, texture of coating and center, etc.

On account of the installation of new refrigerating equipment in the Bureau of Chemistry, the starting of this investigation was delayed, and for this reason observations at this date have only been made covering a storage period of one month. These observations will be continued so as to cover the maximum period during which goods may be kept in cold storage under commercial conditions. The present report is, therefore, to be considered as only preliminary, and will be followed by a detailed final report after the full cold storage period has been completed.

The Observations to Date

The observations so far made show unmistakably that atmospheric humidity is the controlling factor in determining the nature and extent of the damage resulting from withdrawing chocolate-coated goods from cold storage to atmospheric conditions. This statement is made assuming, as will no doubt usually be the case, that the goods are not withdrawn to an atmospheric temperature high enough to cause fat-bloom or "graying" of the chocolate. In this



Oh! Henry's packing department where proper temperature and humidity are maintained by suitable air conditioning equipment.

case, of course, temperature as well as humidity will both be important factors.

If the goods are originally packed in an atmosphere of high humidity there is danger of deposition of moisture on cooling when the goods are brought into cold storage, particularly at very low temperature. Under such conditions, therefore, damage would result upon entering as well as upon leaving cold storage. Goods packed in air-conditioned rooms at relatively low humidity will suffer no deterioration when transferred to cold storage, even at the lowest temperatures observed in this investigation. The goods used in this investigation were coated and packed during a period of low atmospheric humidity. No damage resulted from storage at the minimum temperatures noted.

Damage of these goods did result, however, when they were withdrawn direct from 22° F. to atmospheric conditions of high humidity. This damage was the result of condensation of moisture which, even if present in such small amount as not to be directly noticeable as moisture, nevertheless caused loss of gloss and considerable dullness in the appearance of the coatings. If a still greater amount of moisture is deposited on the chocolate-coated pieces, the condensation is apparent as numerous droplets of moisture. In the case of plain liquor coatings these droplets after drying appeared as small yellow spots. In the case of bitter-sweet or sweet coatings the moisture condensed on

the surface, dissolved sugar from the coating, and upon drying the surface of the coating was made rough and irregular by the dried droplets of sirup. So-called "sugar bloom" of all degrees was noted, according to the quantity of moisture condensed on the coating.

Significance to Package Goods

It is important to note that the relative humidity of the air in the boxes will decrease as the temperature is raised, provided no extensive exchange of air occurs between the interior and outside of the box. Therefore, *if the boxes are very tight* and have been packed in an air-conditioned room or in any atmosphere of low humidity, the increase in temperature upon withdrawing from cold storage to atmospheric conditions will cause such a reduction in relative humidity of the air in the boxes as to eliminate any danger of condensation of moisture on the chocolate coating. However, if the boxes are not practically air-tight and outside air of high humidity diffuses into them, thus increasing the relative humidity of the air in the box, condensation of moisture with resulting dullness, spotting, etc., will appear.

Most packing, even though very tightly done, does not result in hermetically sealing the box. Therefore some exchange of air between the interior of the box and the outside atmosphere will result. The tighter the packing, the longer the time required for an appreciable exchange

of air to occur. This is a very important condition to keep in mind, for the damage upon withdrawing goods from cold storage results from the diffusion of outside air of higher humidity into the box before the contents of the box reach atmospheric temperature. After atmospheric temperature is once reached no further damage results, always assuming, of course, that the atmospheric temperature is not high enough to cause fat-bloom or "graying," which is quite another matter. Therefore, the smaller the increase in temperature upon withdrawing from cold storage to atmospheric temperature, the shorter will be the time during which the contents of the box are at a temperature lower than atmospheric, and consequently the shorter the time during which outside air of higher humidity may diffuse into the box before its contents reach atmospheric temperature. Furthermore, the tighter the wrapping of the package, the less the quantity of outside air which can diffuse into the box during this time.

However, if the atmospheric humidity is relatively low, chocolate-coated goods may safely be withdrawn direct to atmospheric conditions from temperatures as low as 22° F. In one of our tests goods were withdrawn from this temperature direct to atmospheric conditions of 80° F. temperature and relative humidity of 30-35. No damage resulted, even when the boxes were very carelessly wrapped. On the other hand, when candy was withdrawn from 22° F. to atmospheric conditions of 80° F. temperature and 75-80 relative humidity, the goods were severely damaged. In fact, the damage was not confined simply to loss of gloss, for droplets of moisture were condensed on the surface in considerable quantity. Nevertheless, with carefully wrapped packages it is possible to move goods from a *moderate* cold storage tem-

perature to atmospheric conditions of 75-80 relative humidity without damage, this being due to the fact that the goods require a shorter time to warm to atmospheric temperature and the time available for diffusion of outside air of high humidity into the box while the goods are cool is greatly reduced.

General Conclusions

The following important general conclusions can be formulated:

1. Chocolate-coated goods intended for cold storage should be packed in an atmosphere of relatively low humidity.

2. Low cold storage temperatures should be avoided when possible.

3. The higher the cold storage temperature the less danger of deterioration in removing goods from cold storage.

4. Low cold storage temperatures can be used when necessary, provided, if the goods are withdrawn direct to atmospheric conditions, the relative atmospheric humidity at the time is low, say not above 35.

5. If it is necessary to store goods at low cold storage temperatures and it is not possible to withdraw from cold storage direct to atmospheric conditions of low humidity, such goods may be withdrawn gradually by increasing the temperature in several steps.

6. The withdrawal of cold storage goods direct to conditions of atmospheric high humidity should be avoided whenever possible.

These conclusions will be amplified in the final report. Further observations, including more exact data and figures, will be given in the final report which will cover a more extended period of cold storage. Observations relative to possible effect of prolonged cold storage on the centers as well as on the coatings will also be included.





8th Annual Convention of the Confectionery, Biscuit and Chocolate Industries of Canada

HELD in the Mount Royal Hotel, Montreal, on May 12th, 13th and 14th, and with a registration of well over a hundred delegates, the Eighth Annual Convention of the Confectionery, Biscuit and Chocolate Industries of Canada was by far the most successful gathering of this kind that the Association has ever held. Perhaps the most notable feature of this Convention was the fine program of speeches.

Mr. C. Currie, of the D. C. Perrin Co., London, Ontario, and President of the Association for the 1925-26 year, in his presidential address stressed many of the problems in the industry, particularly the discrimination between the tax on biscuits and no tax on cakes. If cakes were exempt, biscuits should be also.

He then went on to outline some of the work of the Association in the past and for the future, including such important efforts as price control, the proper amendment of the unfair cocoa bean clause in the West Indies treaty, the matter of importations of confectionery where such importation was escaping the proper duties and taxes, and the all-important matter of the removal of the sales taxes.

J. T. Crowder on "Price Maintenance"

The other feature of the first morning session was the splendid address by Mr. Joseph T. Crowder, President and General Manager of the Canada Fair Trade League on Price Maintenance. Mr. Crowder outlined the work being done by his league among those engaged in the grocery trade, and stressed the need of absolute cooperation between the manufacturer, the

wholesaler and the retailer in this all-important problem.

Address of C. J. Bodley, Gen. Mgr.

C. J. Bodley, Secretary-Treasurer and General Manager of the Association, gave his report at the Wednesday afternoon session. He outlined the work done since the Association started on its expansion program one year ago. He had made two trips to the West and one to the maritime provinces, bringing new members into the Association, helping to form local branches of the manufacturers at Winnipeg and Vancouver, and holding meetings with the jobbers to advise them in their problems and seek ways and means for better cooperation between them and the manufacturers.

His visits had been more than successful in winning the confidence of this branch of the trade, and in the West a system of price maintenance on chocolate bars has been put into operation that bids fair to stabilize the marketing of at least this one important product of the industries. He also went into the visits made to Ottawa in an endeavor to secure better legislation on many matters of vital importance.

In closing he stressed the dangers that were to be found in the growing number of chain stores in the country, and surmised that unless something fairly definite could be done to control prices, in a few years the manufacturer would be forced to go direct to the consumer with his product.

Mr. E. G. Robinson, President of the Willards Chocolates, Limited, followed Mr. Bod-

ley's report with a splendid address on the "Value of Jobber Price Maintenance."

Consider Linking with H. C. A. Campaign

The morning sessions on the Thursday included two fine addresses, one by Mr. W. E. Floody of the *Canadian Baker and Confectioner* on "The Value of a Trade Paper," and one by Mr. C. M. Mutch of the McKim Company on "What Cooperative Advertising Is Doing." Mr. Mutch had been asked to address the Convention in view of the fact that Canadian confectionery manufacturers are considering the advisability of linking up with the National Confectioners' Association in their great million dollar cooperative advertising campaign to be launched this year. After his address, which was a splendid presentation of the possibilities of cooperative advertising, and which included much valuable data on the candy industry, the members present decided it would be wise for the Canadian Association to take up this campaign. Amounts were subscribed by several outstanding firms to be collectible in the event of \$100,000 being raised in all. Fifty-five thousand dollars was subscribed then and there, and it was thought there would be little difficulty in raising the balance.

The banquet on Thursday evening, May 13th, was a brilliant affair. About 150 were present, including the wives of several delegates. The Montreal committee in charge of the entertainment had prepared an unusually good program, which was well received.

Hon. R. B. Bennett, K. C. M. P. of Calgary, the guest of honor and speaker of the evening,

gave an inspiring address. Stressing in the beginning the need of an individual devotion to high ideals, rather than a desire to amass a fortune, as the prime factor required in modern business, he then dwelt more specifically with some present day national problems. He said that there was an over-capacity and under-consumption in the country that brought about the need for a greater population. Touching on the matter of tariff, he said that all Canada needed or wanted was an "even break" to compete with other countries. He went on to say that no country could be truly great unless it was industrial as well as agricultural. Hon. Mr. Bennett concluded with a plea for national unity, which was long applauded.

The entertainment provided by the Montreal members was an outstanding feature of the Convention. There was a "stag" party on Wednesday night, with unlimited refreshments and a fine program of singing and dancing. On Thursday afternoon delegates were taken for a drive around Montreal and visited the Laura Secord Studio by special invitation.

The Friday sessions were taken up with sectional committee meetings and business sessions. The officers elected for the 1926-27 year were as follows:

The following officers were elected for the ensuing year: President, L. St. Mars of Viau Frere, Ltd., Montreal; First Vice-President, Frank P. O'Connor, Laura Secord Co., Toronto; Second Vice-President, E. G. Robinson, Willards Chocolates, Ltd., Toronto; General Manager and Secretary-Treasurer, C. J. Bodley of Toronto.

Mischief in the Fondant Barrel

(Continued from page 31)

Examining Fondant From the Barrel

Three samples were taken from the different batches from the wooden barrel and portions were plated and inoculated into fermentation tubes and imitation chocolates. All three batches produced abundant gas in the fermentation tubes, taking eight days at 68° F. and two days at 90° F. The gas proved to be $\text{CO}_2 = 99.5$ per cent, $\text{H}_2 = .5$ per cent. The imitation chocolates exploded within ten days at 90° F. and twenty-five days at 68° F. The contents when heated gave off an odor of alcohol. Microscopical examination showed yeast only.

Several poured plates of Sabourauds agar

were exposed in the factory for five minute intervals. A few yeast and mould colonies developed. Less than ten per plate.

Summary

1. Explosion or bursting of chocolates was found to be due to the growth and development of yeasts.

2. The source of the yeasts was found to be a wooden barrel which was used to hold excess filler until required for dipping.

3. Further outbreaks were controlled by installing vessels capable of being cleaned and sterilized between batches.

Monthly Review of Current Technical Literature

of direct or indirect relationship to the confectionery industry

THE chemical press and other scientific literature of America, also of Germany, France, England, Italy and other foreign countries, contains from time to time some discussions which have an important bearing on the technical phases of the confectionery industry. The reliable scientific publications of the world are being searched each month for this material which will hereafter be digested and presented in the following form in this publication. If desired, we are in position to furnish photostatic copies of original articles at 25c per page.

From Corn to Sugar in Ten Days. *Scientific American*, July, 1926, page 52. The manufacture of sugar from corn is now possible in quantity production, two chemical processes having been developed for the commercial manufacture of sugar from America's biggest grain crop.

Methods of extracting sugar from corn are not new to chemists; but a revival of interest in the possibilities of corn sugar has been brought about by the surplus from the 1925 three-billion-bushel corn crop, which is a depressing economic factor to the corn growers of the Middle West, and by a bill which is pending before Congress. This bill, if enacted, would admit of the marketing of corn sugar or dextrose on a par with sugar from cane and beets, without any distinguishing label.

Wintergreen Poisoning. N. C. Wetzel and J. D. Nourse. *Arch. Path. Lab. Med.* 182-188. A discussion of clinical and pathological features of poisoning due to oil of wintergreen are described, together with a review of all fatalities thus far recorded. Fatal poisoning may be produced by relatively small amounts of oil of wintergreen. Absorption of less than 15 cc (approximately one-half ounce) has repeatedly resulted in death. Particular caution should be exercised to prevent the indiscriminate use of pharmaceutical and confectionery preparations containing oil of wintergreen.

Sweetening and Preserving Power of Saccharin. By A. Traegel. *Z. Ver. deut. Zuckerind.* V. 75, pp. 345-59. Boiling with water alone showed slight hydrolysis of saccharin with change from acid to alcohol reaction (rise in pH). Boiling with weak solns. of oxalic, tartaric, malic or acetic acid produced hydrolysis with loss of sweet, and gain of bitter taste. The same effects upon taste were observed in 50 per cent sugar solns. in which 10, 30 and 40 per cent of the sugar was substituted by saccharin on boiling 3 to 5 hours in presence of small amts. of the above acids. Cooking of saccharin in apple sauce had the

same result. Saccharin or its hydrolysis products are regarded as having no antiseptic powers unless present in such large quantity as to render foodstuffs unpalatable.

The Curing of Cacao. By F. L. Stevens. *Bull. Dept. Agriculture, Trinidad and Tobago*, V. 21, part 1, pp. 27-35. As a result covering some 250 experiments, it was found that successful curing of cacao beans depends upon (1) non-development of acidity through avoidance of exposure to bacteria and yeasts; (2) complete killing of the embryo by heat, and (3) maintaining the oxidizing enzymes in an uninjured condition. A product of superior color and aroma was obtained by holding the beans at 40°-60° for several days out of contact with bacteria and yeasts. Action of the oxidizing enzymes proceeded as well in water as in the dry state.

Jelly Base. U. S. Patent 1,580,665, April 13. A pectose ext. obtained from apple pulp or other vegetable pulp is treated with a fungus such as *Eurotium oryzoë* (Ahlburg) which possesses both diastatic and fermenting properties active in slightly acid media to convert the starch and albumin constituents of the ext. into modified forms and prevent their precipitation.

New Variety of Mint. F. Bruno. *Riv. ital. essenze* V. 7, pp. 67-70. A new oil which may be of use to confectioners, obtained originally from the oil *Mentha mirennæ*, Island Tine, in the Grecian archipelago, has a sweet odor closely resembling that of oil of bergamot; it contains alcohols 55.96 per cent, menthol 13.78 per cent and linalool 42.18 per cent.

Useful Substitute for Egg Albumen. *Der Zuckerbacker*, V. 30, No. 4, page 15. Professor Bunker of the Biological Laboratory of the Massachusetts Institute of Technology, has developed a process producing a protein containing foodstuff from meat which may be used as a substitute for egg albumen.

Digest of Technical Literature—Continued

It is a pulverent golden yellow, odorless compound, which may be kept indefinitely without difficulty.

The cost of this preparation is approximately one-sixteenth of that of egg albumen, and it may be used interchangeably with egg albumen for all purposes. When mixed with dried egg yolk it may be used in lieu of the natural egg. Mixed with water it may be beaten to a froth; it is regarded as superior to the natural egg albumen for bakers and confectioners' purposes.

Chemistry and Analysis of the Permitted Coal-Tar Food Dyes. Joseph A. Ambler, W. F. Clarke, O. L. Evenson and H. Wales. U. S. Department of Agriculture, Bulletin 1390, 1-39 (1926). The chemical properties, purity, specifications and methods of manufacture of 11 of the permitted coal-tar food colors are described, and revised methods given for their analysis.

Cocoonut Oil in Cacao Butter and Chocolate. J. Ruffy, Mitt. Lebensm. Hyg. 17, 15-19 (1926). The erratic results obtained by the method of Hartel and Maranis in determining cocoonut oil in cacao butter and chocolate, may be entirely obviated by using the following modification: saponify with 4 cc. glycerol and 2 cc. potassium hydroxide solution (1:1). Distilled 110 cc. filter the entire distillate, wash with 10 cc. of distilled water and heat the filtrate to boiling to remove carbon dioxide. Titrate with 0.1 normal soda hydroxide solution. Acidify with sulphuric acid, make up the volume to 200 cc. and re-distill 100 cc. Titrate as before.

The transition number of cacao butter, or the fat from chocolate, should not be over 60; that of fat from milk chocolate not over 80. As little as 1 to 2 per cent of cocoonut oil may be detected in cacao products by this method.

Commercial Manufacture of Pectin Sirups and Powdered Pectins. Wm. A. Rooker, Fruit Products Journal and American Vinegar Industry, V. 2, page 2. Rooker described the grinding of the apple, the drying of the resulting pomace and its subsequent leaching in cold water. Jelly strengths of various pectins, their method of extraction, preliminary clarification, cooling, removal of starch, testing, packing and pasteurizing processes are given in great detail.

Apparatus for Manufacture of Chocolate. Buhler, Geb., British Patent 238,880, August 22, 1924.

New Process for Preserving Lemons, Oranges, Cherries and Other Fruits. H. Schlosstein. U. S. Patent, 1,582,086. Lemons and other fruits are dipped into an emulsified mixture of borax, or boric acid, sodium para toluenenonochlorosulfonamide or other antiseptic material, and a colloidal earth, such as colloidite or bentonite.

Determination of Menthol in Alcoholic Solutions. Donath and J. Sebor. Menthol can be detected in alcohol solutions by polarimetric method by means of the following equation $100 (0.346 a/2 [a]_D) = \% \text{ menthol in solution}$. For 180 (a) $p=49.5$ if the polarimeter tube is 20 cm. The alcohol can be calcd. from d of the solution, if 0.0004 is added to the abs. detns. for each g. of menthol in 100 cc. soln.

Convention of Extract Manufacturers. Oil, Paint & Drug Reporter, V. 109, No. 25, p. 23. The seventeenth annual convention of extract manufacturers was held at Briar Cliff Mount, N. Y., June 8 to 11. President Rogers, reviewing the year, spoke of the labeling laws as pertaining to the labeling of compound extracts, alcohol, tax reduction, the matter of oversized cartons, and certain much-needed legislation. Mr. F. X. Dietlin discussed the outlook for vanilla beans, and Charles L. Hinsking reported on the outlook for messina lemon oil.

A New Emulsifying Agent for Volatile Oils. C. H. LaWall, J. Am. Pharm. Assoc., V. 14, p. 703-4. A mixture of 20 per cent powdered egg albumen and 80 per cent potassium bitartrate is an excellent emulsifying agent for volatile oils. For oils heavier than water, such as oil of sassafras or wintergreen, 100 grams of the oil are placed in a 200 cc. bottle, one gram of the emulsifying mixture is added and the whole well agitated. 100 cc. of water are then incorporated and the mixture well shaken for one minute. Emulsions made in this manner stand well. For oils lighter than water, $2\frac{1}{2}$ times the amount of emulsifying mixture is used, and this new emulsifying agent is particularly useful for preparing concentrates for adding to sirups in the confectionery.

The Decomposition of Cinnamaldehyde by Sudden Heating. Bull. soc. chim. V. 30, p. 214-16. This item is of interest to the confectioner as a commercial oil of cassia and oil of cinnamon contain approximately 85 per cent cinnamaldehyde. When cinnamaldehyde is passed rapidly through a hot tube, 11.4 per cent of the material appears in the form of a gas having the following composition:

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|-----------------------|------|
| Carbon Monoxide | 73 % |
| Hydrogen | 9 % |
| Benzol | 3.1% |
| Acetylene | 3.6% |
| Ethylene | 8.7% |
| Methane | 2.6% |

The liquid product is styrene and some distyrene.

Temperature Inactivation of Sucrase. By Hans von Euler and Karl Josephson. In the Z. physiol. Chem. V. 152, p. 254-63. Sucrase is the yeast enzyme having to do with the fermentation of cane sugar. Partial inactivation of sucrase by heating in aqueous solution at optimum acidity effects no change in the affinities of the enzyme for the different forms of glucose or for fructose. Even in the presence of glucose or fructose as protective substances, the heat inactivation causes no appreciable change in the affinity relations.

Vitamin B as an Ingredient of Lemon Rind. By S. G. Willimott. Biochem. J. V. 20, p. 31-6. $\frac{1}{2}$ cc. (equivalent to only one-quarter gram) of lemon rind fed per rat per day as the sole source of Vitamin B gave nearly normal growth. This is of interest to the confectioner who may wish to candy lemon peel and sell it as a vitamin containing substance.

A Modification of the Calcium Pectate Method for the Estimation of Pectin. By A. M. Emmett and M. H. Carre. Biochem. J. V. 20, p. 6-12. The
(Continued on page 48)

The 1926 Program of Accomplishments of The National Confectioners' Association

A letter to members of the N. C. A.

THE 1926 Convention recently held brought clearly to all present the general desire and need for constructive work to bring about an improvement of conditions within our industry. Conventions usually develop these things, but nothing can be practically done at conventions to bring about corrective actions. In the interim between conventions, things take their natural course and then we have another convention and talk about them, and so it goes from convention to convention.

After a discussion of two hours at one of the group meetings held at the convention, one man present asked, "Well, what are we going to do about it?" And that question should be answered.

No one has any right to assume that there is nothing necessary to be done, nor that it is impossible to do anything. There are many things to be done and many things that can be done, and your Executive Committee, at its meetings during the convention, prepared recommendations as to ways and means of carrying on throughout the year with constructive work and these recommendations were submitted to the convention through the Committee on Resolutions and were unanimously approved by the convention.

The plan is to create special committees of men vitally interested in the various problems confronting us, and these special committees will be made up of sub-committees in various sections of the country. The sub-committees will meet and outline their views as to ways and means of solving the problems before them and will appoint one of their number as a member of the principal committee. The principal committee will then meet and formulate definite plans of action, which plans will be placed in the hands of the Executive Committee and officers of the association for action.

It is not sufficient that the Executive Committee and officers should formulate these plans, because their interests and experiences do not always qualify them to do so and, furthermore, the great need of the industry is that more of its members should give thought and attention to its problems, with the knowledge in mind that their association will render the necessary assistance in putting their conclusions into practical effect.

The success and growth of any association lies wholly within the service the association renders to its members, and our association has lost members solely because they could see no value in their membership commensurate with the dues they paid. We all want our money's worth and your Executive Committee and officers are going to do their best to see that you get it.

The association is now rendering a very efficient and valuable trade mark service. It is looking after national and state legislation, seeing that laws

detrimental to our industry are not passed. Through its secretary, guided by the General Counsel, Trade Mark Counsel and Washington representative, it is rendering legal opinions on various subjects and there are many other things being done that are proper duties of a national association, but there are many other things necessary and important that can be done.

To this end the following questions will be immediately taken up for consideration and action:

Re-Sale Price: Lawful and practical application of the resale price by Jobber to Retailer.

Returned Goods: Methods of lessening the returned goods evil.

Consignment Sales: Ways and means by which this practice can be kept within reasonable bounds.

Credit Information: Some practical plan by which a more thorough and active interchange of credit information can be brought about, together with a lessening of credit risks and restriction upon admitting into the industry persons of unreliable credit responsibility and also the question of cash discounts.

Traffic: Some practical way by which our association can co-operate with local traffic bureaus and by which we can render a traffic service to our members that will be useful to them.

Arbitration: The development of greater use of arbitration by our industry.

Local Associations: A closer contact between our association and local associations so that we may co-operate with local associations in helping them with their work.

Jobbers' Associations: A constructive co-operation. Mutually beneficial to manufacturers and jobbers. Joint meetings of representatives of both classes, leading to knowledge of things that can be practically done to help each other.

Gambling Devices—Picks, Draws, Etc.: Your Secretary, after a hard year's work, has formulated an organization through which much should be accomplished in wiping out these methods.

This looks like a big job, and it would be if left to only a few to accomplish, but through the plan of special committees the work can be divided and placed in competent hands, and though there is no expectation of a millennium, much good should be accomplished.

Respectfully,

V. T. PRICE,
President.

Digest of Technical Literature

(Continued on page 44)

authors have criticized the present methods of estimating pectin by neutral 95 per cent alcohol owing to the failure of alcohol to precipitate a dilute solution. Acidified alcohol is considered much superior. Where the pectin solutions contain substances which may be precipitated by volume, the authors precipitated first with acidulated alcohol and then dissolved the precipitation and re-precipitated as calcium pectate.

Effect of Chemical Preservation of Eggs Upon the Stability of Their Vitamin Content. By Ernest Tso. *Biochem. J. V. 20*, p. 17-22. "Pidan" is a product made from raw duck eggs by adding a mixture of lime, straw ash, soda, table salt and water. In these preserved Chinese eggs, the vitamin B content has been destroyed. The vitamin A has, however, not been affected.

The Determination of Lactose in Milk. By H. Weiss and B. Beyer. In the *Milchwirtschaft Forsch. V. 2*, p. 108-12. In addition to the method of Bruhns, that of Weiss is recommended and a detailed description of the process is given.

Investigations in Fig Culture and Treatment. By S. R. Gandhi. Dept. of Agriculture, Bombay Presi-

dency, Bull. 117. Fresh Poona figs contained 75% water, 17.2 total sugars, and 15.2 reducing sugars. The composition of dried figs is given and the water and reducing-sugar content of Persian, Afghanistan, Grecian and Smyrna figs are given.

Cereal Sugar in Block Form. R. E. Daly. U. S. Patent 1,575,975, March 9, 1926. Granular dextrose sugar (corn sugar) as it comes from a centrifuge with a moisture content of 12-14% is subjected to a gradually increasing pressure in a mold. The compressed material is forced out of the mold and placed in a drying chamber where the moisture content is reduced to 10% and the material is then cut into small blocks.

Curing Cacao Beans. By W. B. McLaughlin. U. S. Patent 1,573,371 issued March 2, 1926. Cacao beans are maintained out of contact with air at a temperature, usually about 50-55°, above that at which organized ferments grow and below that at which the enzyme of the bean is injured, until the purplish red color of the bean changes to a reddish brown which upon drying becomes cinnamon brown.

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